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| 10/772,097 | 02/03/2004 | Masashi Aikawa | 482782005410 | 5056 |

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MORRISON & FOERSTER, LLP
555 WEST FIFTH STREET
SUITE 3500
LOS ANGELES, CA 90013-1024

EXAMINER

PANG, ROGER L

ART UNIT PAPER NUMBER

3681

DATE MAILED: 12/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/772,097

Applicant(s)

AIKAWA ET AL.

Examiner

Roger L. Pang

Art Unit

3681

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2, 6-8, 12-14, 29-34, 36 and 37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 36 and 37 is/are allowed.
- 6) ☒ Claim(s) 2, 6-8, 12-14 and 29-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 09/829,335.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>11-8-05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The following action is in response to the amendment filed for application 10/772,097 on November 8, 2005.

Election/Restrictions

Applicant's election without traverse of Transmission 1 in the reply filed on October 18, 2004 is acknowledged.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 32-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. With regard to claim 32, on lines 10 and 11, the limitation of "an output gear" is introduced (twice total). If they are the same limitation, the second one should reference the previously disclosed limitation, otherwise, a different label should be used. With regard to claim 34, on line 2, it is unclear which "output gear" the claim is referencing from claim 32, if they are indeed two different output gears.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 2, 8, and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Takemura '227. With regard to claim 2, Takemura teaches a power transmission system comprising: a speed reducing mechanism 3 for speed-reducing drive power of an electric motor 2; a differential apparatus 32 for distributing speed-reduced drive power to axle ends; a clutch 29 configured for interruptive transmission of drive power between the speed-reducing mechanism and the differential apparatus; a main power source 1; wherein the electric motor used as an auxiliary drive power source relative to the main drive power source (Fig. 1) and wherein the clutch is disposed in opposition to the electric motor relative to the speed reducing mechanism. With regard to claim 8, Takemura teaches the system, wherein the speed-reducing mechanism and the differential apparatus are integrally arranged in a casing 9. With regard to claim 29, Takemura teaches the system, wherein the speed-reducing mechanism is provided with a plurality of reduction gears 26/28 near a differential center of the differential apparatus.

Claims 6-7, and 12-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Janiszewski '387. With regard to claim 6, Janiszewski teaches a power transmission system comprising: a speed reducing mechanism for speed-reducing drive power of an electric motor 1; a differential apparatus 10 for distributing speed-reduced drive power to axle ends 30/31; and a clutch 19 configured for interruptive transmission of drive power between the speed-reducing

Art Unit: 3681

mechanism and the differential apparatus, wherein the speed-reducing mechanism comprises a plurality of reduction gear sets 13/15; 14/16 and the clutch is disposed in a power transmission path of the speed-reducing mechanism, and wherein the clutch is disposed in opposition to the electric motor relative to the plurality of reduction gear sets (Fig. 2). With regard to claim 7, Janiszewski teaches the system, wherein the speed-reducing mechanism and the differential apparatus are neighbored to each other (Fig. 2), and the clutch is coaxially provided to one of the plurality of reduction gear sets 13/15 of the speed reducing mechanism that is nearest to the differential apparatus. With regard to claim 12, Janiszewski teaches the system, wherein the plurality of reduction gear sets of the speed-reducing mechanism is provided near a differential center of the differential apparatus (Fig. 2). With regard to claim 13, Janiszewski teaches a power transmission system comprising: a speed reducing mechanism for speed-reducing drive power of an electric motor 1; a differential apparatus 10 for distributing speed-reduced drive power to axle ends 30/31; and a clutch 19 configured for interruptive transmission of drive power between the speed-reducing mechanism and the differential apparatus, wherein the clutch comprises a frictional clutch 19, and wherein the clutch is disposed in opposition to the electric motor relative to the speed reducing mechanism (Fig. 2). With regard to claim 14, Janiszewski teaches the system, where the frictional clutch comprises a multi-plate clutch (Fig. 2).

Claim 32 is rejected under 35 U.S.C. 102(b) as being anticipated by Yang '743. Yang teaches a power transmission system for vehicles including a main drive wheel W101 and an auxiliary drive wheel W102, the system comprising: a main power transmission system configured to transmit main drive power P101 to the main drive wheel via a first train of torque transmitters CL102//CL103; and an auxiliary power transmission system configured to transmit

Art Unit: 3681

auxiliary drive power from an electric motor U101 to the auxiliary drive wheel via an interruptive second train of torque transmitters including: a differential GB101; a plurality of reduction gears M101 disposed between the electric motor and the differential; a final reduction gear meshing with an output gear coaxial to the differential (Fig. 1); and a clutch CL104 disposed between a second output gear (output of M101) coaxial to and supported by an input shaft of the final reduction gear and the final reduction gear (Fig. 1), wherein the electric motor is connected to a shaft other than the input shaft of the final reduction gear (Fig. 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 30-31, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang' 743 in view of Teraoka. With regard to claim 30, Yang teaches a power transmission system for vehicle including a main drive wheel W101 and an auxiliary drive wheel W102, the system comprising: a main power transmission system configured to transmit main drive power P101 to the main drive wheel via a first train of torque transmitters CL102/CL103; and an auxiliary power transmission system configured to transmit auxiliary drive power from an electric motor U101 to the auxiliary drive wheel W102 via an interruptive second train of torque transmitters including: a differential GB101; a combination of a reduction M101 and a clutch CL104 disposed between the electric motor and the differential; an actuator configured to provide the clutch with an engagement force (inherent); wherein the actuator (by the clutch

Art Unit: 3681

itself) is disposed on an axially opposite side of the reduction to the electric motor, but lacks the teaching of said clutch having a cam mechanism. Teraoka teaches a clutch 1041 between two shafts, wherein the clutch is a frictional clutch actuated 1063 by a cam mechanism 1053. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Yang to employ a clutch actuated by a cam mechanism in view of Teraoka in order to controllably and stably limit the differential motion between two shafts (Abstract). With regard to claim 31, Teraoka teaches the system, wherein the actuator 1063 is electrically operable to provide the engagement force. With regard to claim 33, Yang teaches the system, but lacks the specific teaching of the clutch CL104 being located between bearings supporting the final reduction gear. Teraoka teaches of a clutch 1045 disposed between bearings 1035/1037 that (within the system) support an input shaft (Fig. 1). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Yang to employ bearings to support the input shaft in view of Teraoka in order to provide support of the clutch and input shaft within the vehicle.

Claims 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yang in view of Tokushima '901. With regard to claim 34, Yang teaches the system, wherein the output gear at a front gear stage of reduction and the clutch is disposed in opposition to the final reduction gear relative to the output gear at the front gear stage (Fig. 1), but lacks the specific teaching of bearings supporting the input shaft. Tokushima teaches of a clutch 41 disposed between bearings supporting an input shaft (Fig. 1). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Yang to employ bearings to support the input shaft in view of Tokushima in order to provide support within the vehicle.

Allowable Subject Matter

Claims 36-37 are allowed.

Response to Arguments

Applicant has added similar limitations to those of allowed claim 36, however, the claimed system as a whole in the new amended independent claims do not overcome the prior art (as seen above).

Applicant's arguments with respect to claims 30 and 32 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Christian, Schmidt '671 and '588 have been cited to show similar transmissions.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

Art Unit: 3681

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

FACSIMILE TRANSMISSION

Submission of your response by facsimile transmission is encouraged. The central facsimile number is (571) 273-8300. Recognizing the fact that reducing cycle time in the processing and examination of patent applications will effectively increase a patent's term, it is to your benefit to submit responses by facsimile transmission whenever permissible. Such submission will place the response directly in our examining group's hands and will eliminate Post Office processing and delivery time as well as the PTO's mail room processing and delivery time. For a complete list of correspondence not permitted by facsimile transmission, see MPEP 502.01. In general, most responses and/or amendments not requiring a fee, as well as those requiring a fee but charging such fee to a deposit account, can be submitted by facsimile transmission. Responses requiring a fee which applicant is paying by check should not be submitting by facsimile transmission separately from the check.

Art Unit: 3681

Responses submitted by facsimile transmission should include a Certificate of Transmission (MPEP 512). The following is an example of the format the certification might take:

I hereby certify that this correspondence is being facsimile transmitted to the Patent and Trademark Office (Fax No. (571) 273-8300) on _____ (Date)

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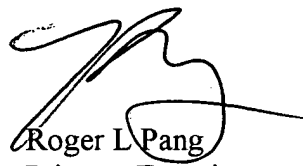
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If your response is submitted by facsimile transmission, you are hereby reminded that the original should be retained as evidence of authenticity (37 CFR 1.4 and MPEP 502.02). Please do not separately mail the original or another copy unless required by the Patent and Trademark Office. Submission of the original response or a follow-up copy of the response after your response has been transmitted by facsimile will only cause further unnecessary delays in the processing of your application; duplicate responses where fees are charged to a deposit account may result in those fees being charged twice.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roger L. Pang whose telephone number is 571-272-7096. The examiner can normally be reached on 5:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Marmor can be reached on 571-272-7095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Roger L. Pang
Primary Examiner
Art Unit 3681

December 16, 2005